CLAIMS

What is claimed is:

1. A process for decoding a symbol stream with forward error correction to produce an information bit stream comprising:

receiving the symbol stream from a transmitter;

decoding the symbol stream in an inner decoder using soft-output decoding to produce an output bit stream and associated bit error probabilities;

providing to an outer decoder the bit error probabilities and the output bit stream from the inner decoder; and

producing an information bit stream in the outer decoder by correcting errors in the output bit stream in accordance with the bit error probabilities from the inner decoder.

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2. The method recited in claim 1, wherein said soft-output decoder is a Maximum a Posteriori (MAP) decoder.

3. The method recited in claim 1, wherein said soft-output decoder is a Logarithmic MAP (LOGMAP) decoder.

4. The method recited in claim 1, wherein said soft-output decoder is a Maximum LOGMAP (MAXLOGMAP) decoder.

5. The method recited in claim 1, wherein said soft-output decoder is a soft-output Viterbi Algorithm (SOVA) decoder.

6. The method recited in claim 1, wherein said outer decoder is a RS decoder.

7. The method recited in claim 1, wherein producing an information bit stream in accordance with the bit error probabilities from the inner decoder comprises:

generating, from said bit error probabilities, bit error information indicating bits requiring correction by the outer decoder; and correcting errors in accordance with said bit error information.

8. The method recited in claim 7, wherein generating said bit error information comprises subjecting said bit error probabilities to a thresholding procedure.

9. A process for decoding a symbol stream with forward error correction to produce an information bit stream comprising:

receiving the symbol stream from a transmitter;

decoding the symbol stream in an inner decoder using sum-product decoding to provide an output bit stream and bit error information for the output bit stream;

providing to an outer decoder the bit error information and the output bit stream; and

producing an information bit stream in the outer decoder from the bit error information and the output bit stream.

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10. The method recited in claim 9, wherein said sum-product decoding comprises LDPC decoding.

11. The method recited in claim 9, wherein said outer decoder is a RS decoder.

12. The method recited in claim 9, wherein producing an information bit stream comprises correcting errors in said output bit stream in accordance with said bit error information.

13. A process for encoding a symbol stream with forward error correction from an information bit stream comprising:

receiving the information bit stream;

encoding the information bit stream in an outer encoder producing an output bit stream;

encoding the output bit stream of the outer encoder in an inner encoder using sum-product encoding; and producing a symbol stream by mapping an output bit stream of the inner encoder to symbols.

14. The method recited in claim 13, wherein said outer encoder is a RS encoder.

15. The method recited in claim 13, wherein said sum-product encoding comprises LDPC encoding.